


CITY MANAGER'S OFFICE MEMORANDUM
#33-2019

DATE: July 1, 2019
TO: Honorable Mayor Antonio B. Esquibel and City Council Members
FROM: Heather Geyer, City Manager 
SUBJECT: Regional Air Quality Council Presentation

PURPOSE

Michael Silverstein, the Executive Director of the Regional Air Quality Council will present on the Council's latest activities around improving air quality in the Denver metropolitan area.

BACKGROUND

The Regional Air Quality Council (RAQC) was established in 1989 to serve as the lead air quality planning agency for the Denver metropolitan area. In July 2013, Governor John Hickenlooper extended and amended the RAQC as the lead air quality planning agency for the Denver metropolitan area and the Denver Metro/North Front Range Ozone Non-Attainment Area.

The mission of RAQC is to develop and propose effective and cost-efficient air quality planning initiatives with input from local government agencies, the private sector, stakeholder groups, and citizens of the Denver metropolitan area and the Denver Metro/North Front Range Ozone Non-Attainment Area. They plan and implement a variety of public outreach and education efforts. The RAQC assists with regional public/private initiatives to reduce emissions from the transportation sector, mobile sources, and other sources.

The 2019 Work Plan and Budget for RAQC can be found online at: <https://raqc.org/about/>.

STAFF RECOMMENDATION

This presentation is for informational purposes only.

BUDGET/TIME IMPLICATIONS

The City contributes \$2,000 annually to the work of the RAQC. This funding is in the Legislative budget.

STAFF REFERENCE

For additional information, please contact Heather Geyer, City Manager at hgeyer@northglenn.org or 303.450.8706.

Presentation to the City of Northglenn

July 1, 2019

Mike Silverstein, Executive Director
Regional Air Quality Council



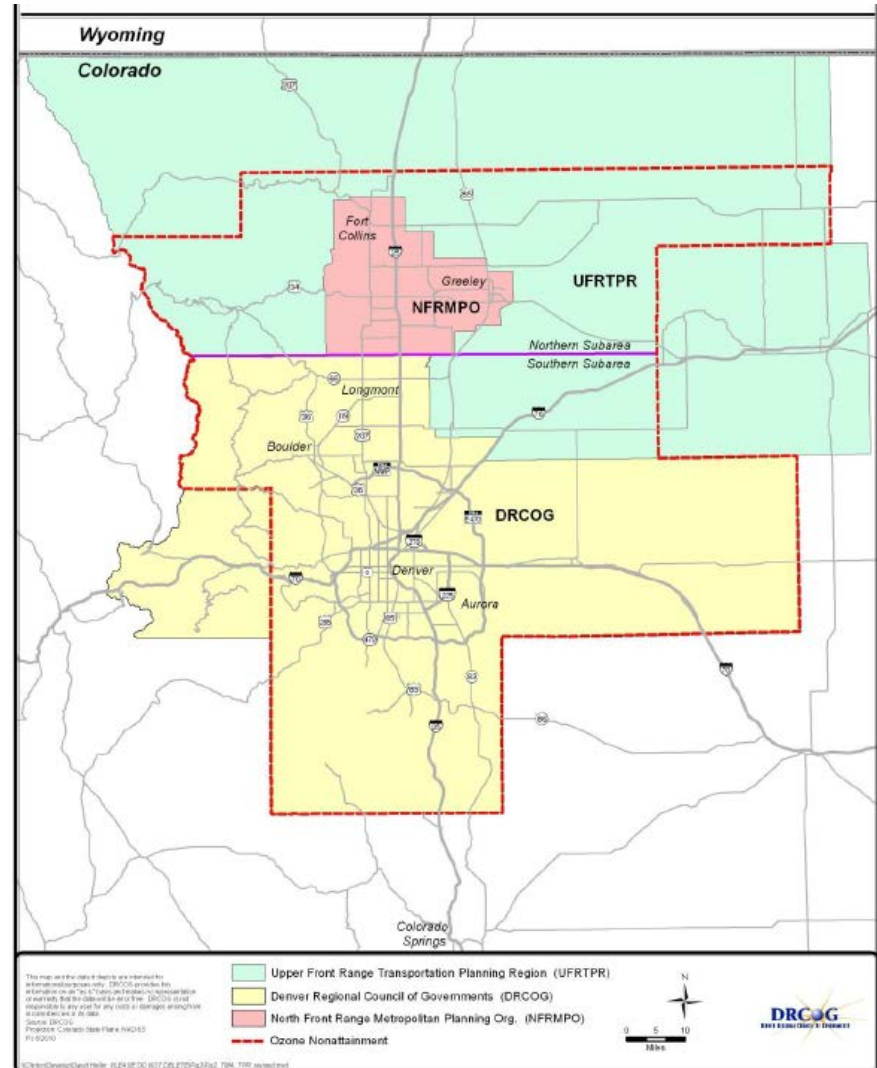
Regional Air Quality Council

RAQC is the lead planning agency for the Denver Metro/North Front Range Ozone Nonattainment Area

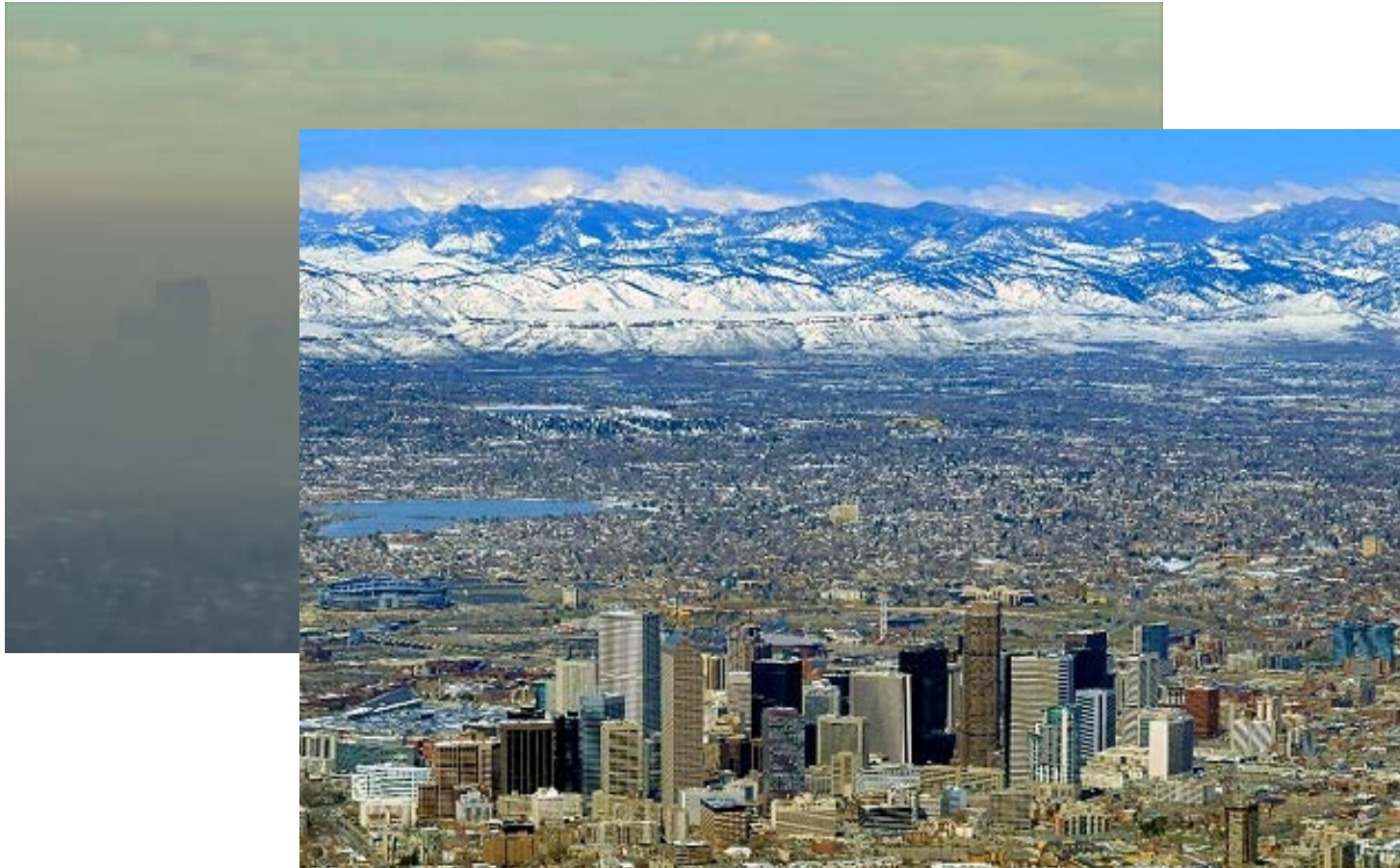
Governor appoints the RAQC Board

Primary responsibilities:


- **Planning to meet air quality standards**
- **Conduct public education and awareness programs**
- **Implement public/private projects to reduce emissions**
- **Represent and assist local governments in the air quality planning process**



Where We Were and Where We Need To Be



Air Pollution: Local Exposure is Definitely a Concern



Thankfully, only occasional exceedances of the particulate health standard are measured.

However:

Denver Metro/North Front Range Air Quality Status

Fine Particulates (PM_{2.5})

Never Violated - Occasional Exceedances Do Occur

Nitrogen Dioxide (NO₂)

Denver Attained in mid '80's

Sulfur Dioxide (SO₂)

Never Violated

Lead (Pb)

Denver Area Attained in mid '80's

Carbon Monoxide (CO)

Denver, Longmont, Ft. Collins, Greeley Attained in 1990's - Maintenance Areas

Coarse Particulates (TSP&PM₁₀)

Denver Area Attained in 1993 – Maintenance Area

Ozone (O₃)

1979 1-hour standard: 125 ppb

Region Attained 1987 (Standard Revoked)

1997 8-hour standard: 84 ppb

Region Attained in 2009 (Standard Revoked)

2008 8-hour standard: 75 ppb

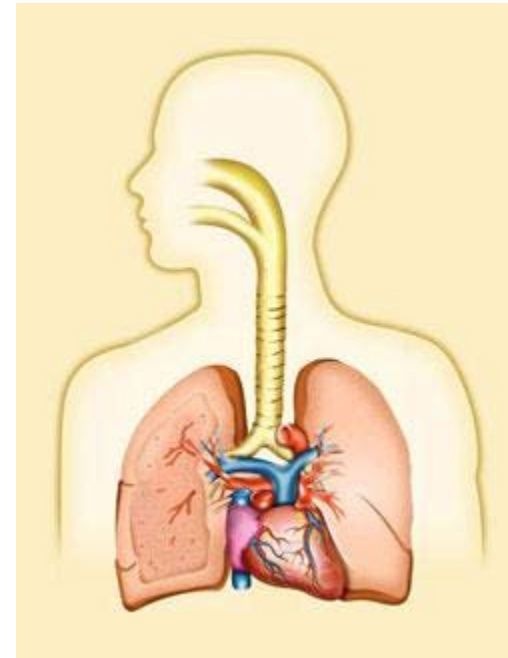
Region Out of Compliance

2015 8-hour standard: 70 ppb

Region Out of Compliance

Ozone can:

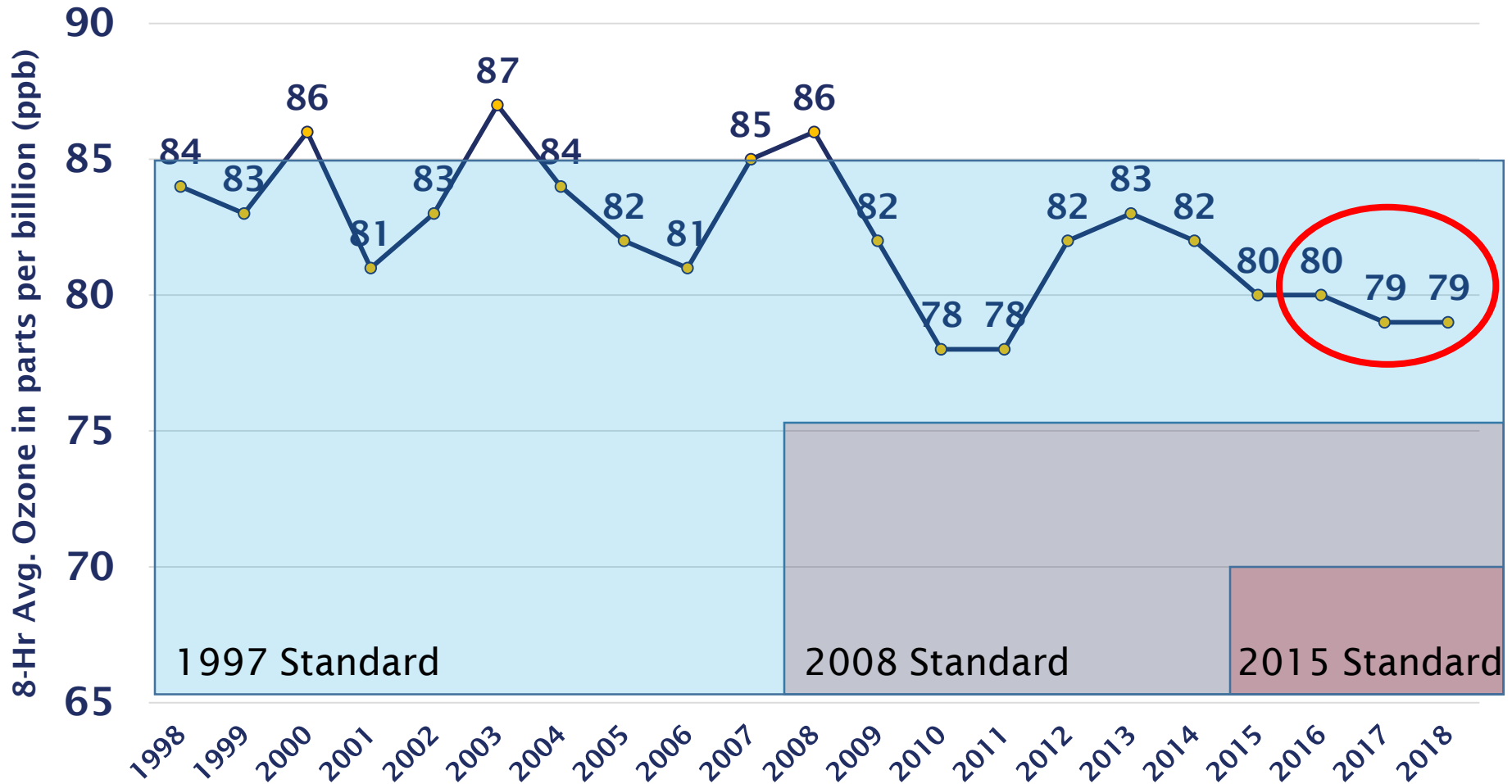
- **Damage crops and vegetation.**
- **Make it more difficult to breathe deeply and vigorously.**
- **Cause shortness of breath, and pain when taking a deep breath.**
- **Cause coughing and sore or scratchy throat.**
- **Inflame and damage the airways.**
- **Cause and aggravate lung diseases such as asthma, emphysema, and chronic bronchitis.**
- **Increase the frequency of asthma attacks.**
- **Make the lungs more susceptible to infection.**
- **Continue to damage the lungs even when the symptoms have disappeared.**
- **Cause chronic obstructive pulmonary disease (COPD).**
- **These effects have been found even in healthy people, but can be more serious in people with lung diseases such as asthma.**
- **High ozone levels lead to increased school absences, medication use, visits to doctors and emergency rooms, and hospital admissions.**
- **Long-term exposures to higher concentrations may also be linked to permanent lung damage, such as abnormal lung development in children.**



Ozone is a powerful oxidant that can irritate the airways.

8-Hour Ozone Trends and Federal Standards

3-Year Design Values in the Denver Metro/North Front Range



8-Hour Ozone Standard: Based on a three-year average of the annual fourth-highest daily 8-hour maximum ozone concentration. Current as of 9/4/18.

2008 Ozone NAAQS (75 ppb)

Marginal: Attaining			<i>16 Areas</i>
Allentown-Bethlehem, PA-NJ	Knoxville, TN	San Luis Obispo, CA	
Baton Rouge, LA	Lancaster, PA	Seaford, DE	
Charlotte-Concord, NC-SC	Memphis, TN	St. Louis, MO	
Cincinnati, OH	Pittsburgh, PA	Upper Green River Basin, WY	
Cleveland, OH	Reading, PA		
Columbus, OH	San Francisco-Oakland, CA		
Moderate: Attaining			<i>3 Areas</i>
Atlanta, GA	Baltimore, MD	Mariposa County, CA	
Marginal: Not Attaining/Incomplete Data			<i>6 Areas</i>
Calaveras County, CA	Philadelphia, PA	Washington-Arlington, DC-VA	
Dukes County, MA	Pechanga Band of Luiseno		
Jamestown, NY	Mission Indians, CA		
Moderate: Not Attaining - 1-Year Extension			<i>2 Areas</i>
<i>Denver/North Front Range, CO</i>	Sheboygan, WI		
Moderate: Not Attaining - Bump-Up to Serious			<i>9 Areas</i>
Chicago, IL	Houston, TX	New York-New Jersey, NY-NJ	
Dallas-Fort Worth, TX	Imperial County (El Centro), CA	Phoenix, AZ	
Hartford, CT	Nevada County (Truckee), CA	San Diego, CA	
Serious and Above: Not Attaining			<i>8 Areas</i>
Kern County, CA	Morongo Band of Mission	Riverside-San Bernardino, CA	
Los Angeles-South Coast Basin, CA	Indians, CA	Ventura County, CA	
San Joaquin, CA	Los Angeles-San Bernardino, CA	Sacramento Metro, CA	

2015 Ozone NAAQS (70 ppb)

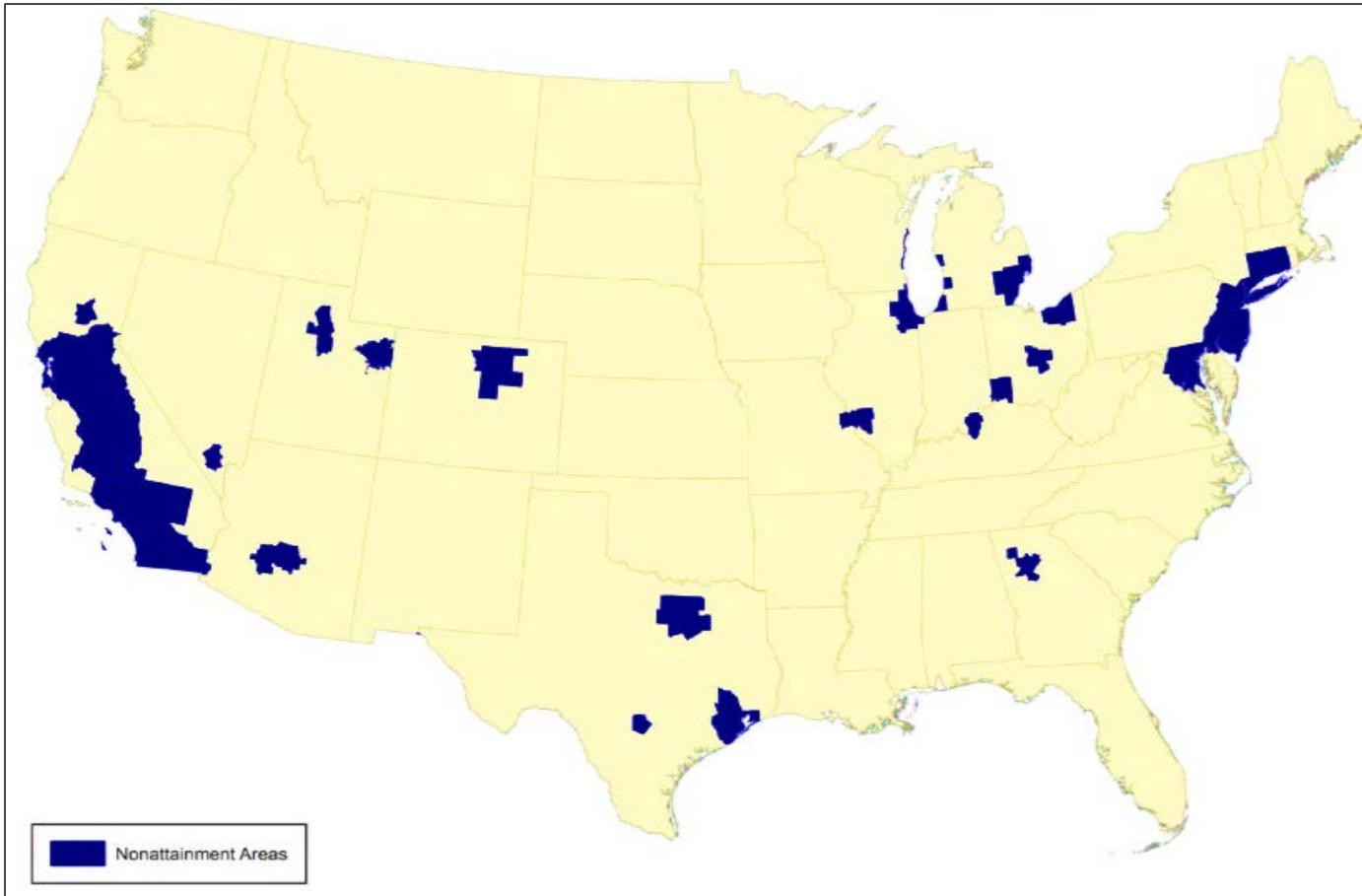
Effective Date:
Aug. 3, 2018

52 Nonattainment Areas

41 Areas Classified
as Marginal:
Includes Denver
Metro/North Front
Range Area

All but 1 area with a
higher classification
are in California

Marginal Attainment
Date: Aug. 2021
(2018-2020 data)



Numerous Emissions Control Programs Already in Place

- **New vehicle emission standards**
- **Inspection and maintenance program**
- **Gasoline and diesel fuel standards and requirements**
- **National small engine, non-road and off-road limits**
- **Industrial source permitting and emission controls**
- **Numerous standards for commercial solvents/paints/coatings supplies and use**
- **Architectural and industrial maintenance coatings and consumer products**
- **Oil and gas industry regulations**
- **Transportation planning and transit**
- **Public education and outreach**

2019/2020 Ozone Work



Technical Analyses

- Identify sources of emissions & estimate the “inventory”
- Determine contributions from sources and geographic regions
- Model future concentrations for both standards
- Model “what if” scenarios to evaluate strategies

Strategy Analyses

- Gasoline & clean diesel standards/policies
- Low Emission Vehicles (LEV)/Zero Emission Vehicles (ZEV)
- Construction equipment
- Lawn and garden equipment
- Low-VOC architectural and industrial maintenance (AIM) coatings and consumer products
- Industrial and area sources
- Agriculture and marijuana grow operations
- Education and outreach approaches

Moving Forward

- Recommend measures to the State for rulemaking
- Implement non-regulatory measures and track progress

RAQC's Outreach and Controls Programs:

Communication Strategies

- **Paid Media**
 - Out of home, radio, digital
- **Digital**
 - Social media, website
- **Earned media**
- **Stakeholder partnerships**
- **Community outreach & sponsorships**

Ozone Action Alerts

- **Email alerts**
- **CDOT highway signs**
- **Social media (Facebook, Twitter)**
- **Digital and mobile**



RAQC's Outreach and Controls Programs:



Lawn mower exchange program that helps Denver Metro/North Front Range residents switch from old gasoline powered mowers to new electric powered alternatives by offering subsidized pricing.

Over 10 years:

4,900+ new electric mowers sold

3,700+ old gasoline mowers recycled

RAQC's Outreach and Controls Programs:



- **In partnership with Colorado Energy Office**
- **Funded over 600 charging stations statewide**
- **Funded 79 vehicles in the metro area for local governments and non-profits**
- **Funded fast-charging network study with NREL to inform future efforts**
- **Recently incorporated Trust Settlement funding into program**



RAQC's Outreach and Controls Programs:



- In partnership with CEO and CDOT
- Funded 810 CNG, propane, and electric LD/MD/HD vehicles for \$11.7 million
- Recently incorporated Trust Settlement funding into program
- Expanding to fund medium/heavy duty vehicles statewide



Looking for Your Support



Funding for RAQC Efforts – Striving to Increase Local Funding to \$700,000/year

- Air quality planning
- Technical analyses
- Education and outreach
- Community events
- Residential lawn mower exchanges
- Commercial lawn and garden equipment incentives
- General operations

We typically receive \$200,000/year based on a funding formula developed in the 1990's

QUESTIONS?

Mike Silverstein

Executive Director

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raqc.org





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This is the RAQC.

Overview of the
Regional Air Quality Council

Our Vision:

Working together, so we can all breathe easier

03 Contents

04 What is the RAQC?

06 Who serves on the RAQC?

07 How is the RAQC funded?

08 What does the RAQC do?

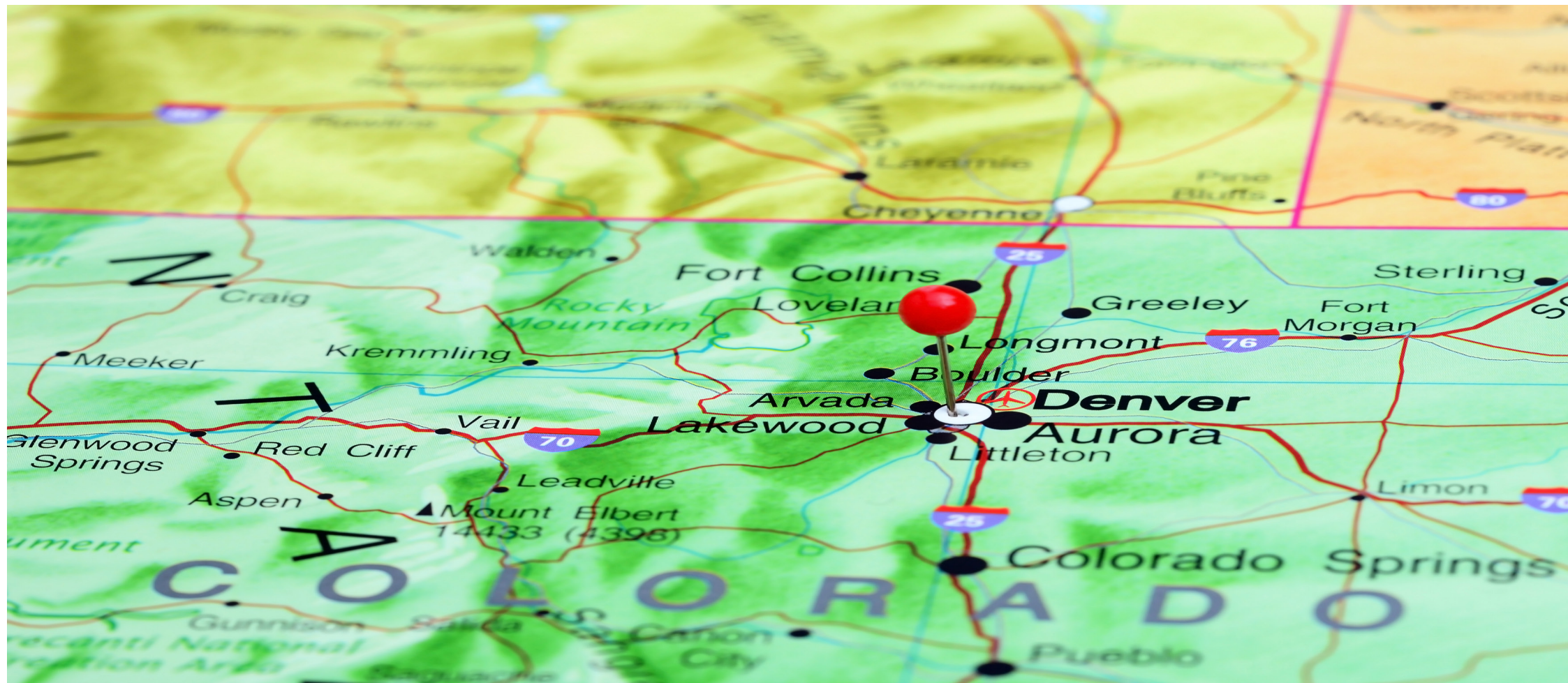
10 What are the RAQCs priorities?

14 Who staffs the RAQC?



Photo courtesy of the Colorado Department of Transportation.





What is the RAQC?

The Regional Air Quality Council (the “RAQC” or “Council”) is the lead air quality planning agency for the nine-county Denver Metro/North Front Range Ozone Nonattainment Area. First established by executive order of the Governor 1989, and most recently reauthorized by executive orders issued in 2009, 2011, 2012 and 2013, the RAQC is charged to work with all sectors of our community and economy to better understand the air quality issues confronting the region. Our mission is to develop and propose to the State Air Quality Control Commission (“AQCC”), local governments and the private sector effective and cost-efficient initiatives, with input from local government agencies, the private sector, stakeholder groups, and citizens. The RAQC also partners with public and private entities to reduce emissions from vehicles, industry, and other sources, and we implement a variety of outreach and education efforts.

The RAQC’s primary task is to prepare air quality plans that demonstrate and ensure long-term compliance with federal air quality standards and that provide acceptable public health and environmental protections for the region. The RAQC provides these plans to the AQCC for consideration and approval. The Council also administers public education through the “Simple Steps. Better Air.” program, and directly reduces vehicle emissions through the Charge Ahead Colorado, Mow Down Pollution, and the ALT Fuels Colorado programs. The Council serves as an educational resource on air quality issues to elected city and county officials, many of whom have served or continue to serve on its board. Finally, the Council participates in rulemaking proceedings affecting air quality programs in the region.

Over the years, the RAQC has successfully developed air quality plans for carbon monoxide, particulate matter and ozone, as required by the federal Clean Air Act. While significant progress has been made in improving air quality - achieving federal air quality standards for carbon monoxide and particulate matter, and reducing the visible brown cloud - there is more work ahead to improve public health, especially for children and other sensitive populations. Ozone pollution is the most pressing air quality issue facing the Denver region – achieving compliance with federal ozone standards has been and will continue to be the RAQC’s main focus under the existing Executive Order.

As the RAQC continues to address ozone and other local air quality matters, attention will be paid to the larger issue of climate change. The RAQC will consider how, and to what degree, its actions and programs affect the region’s emissions of greenhouse gases. Helping Colorado achieve climate protection goals is a priority for the RAQC.

Who serves on the RAQC?

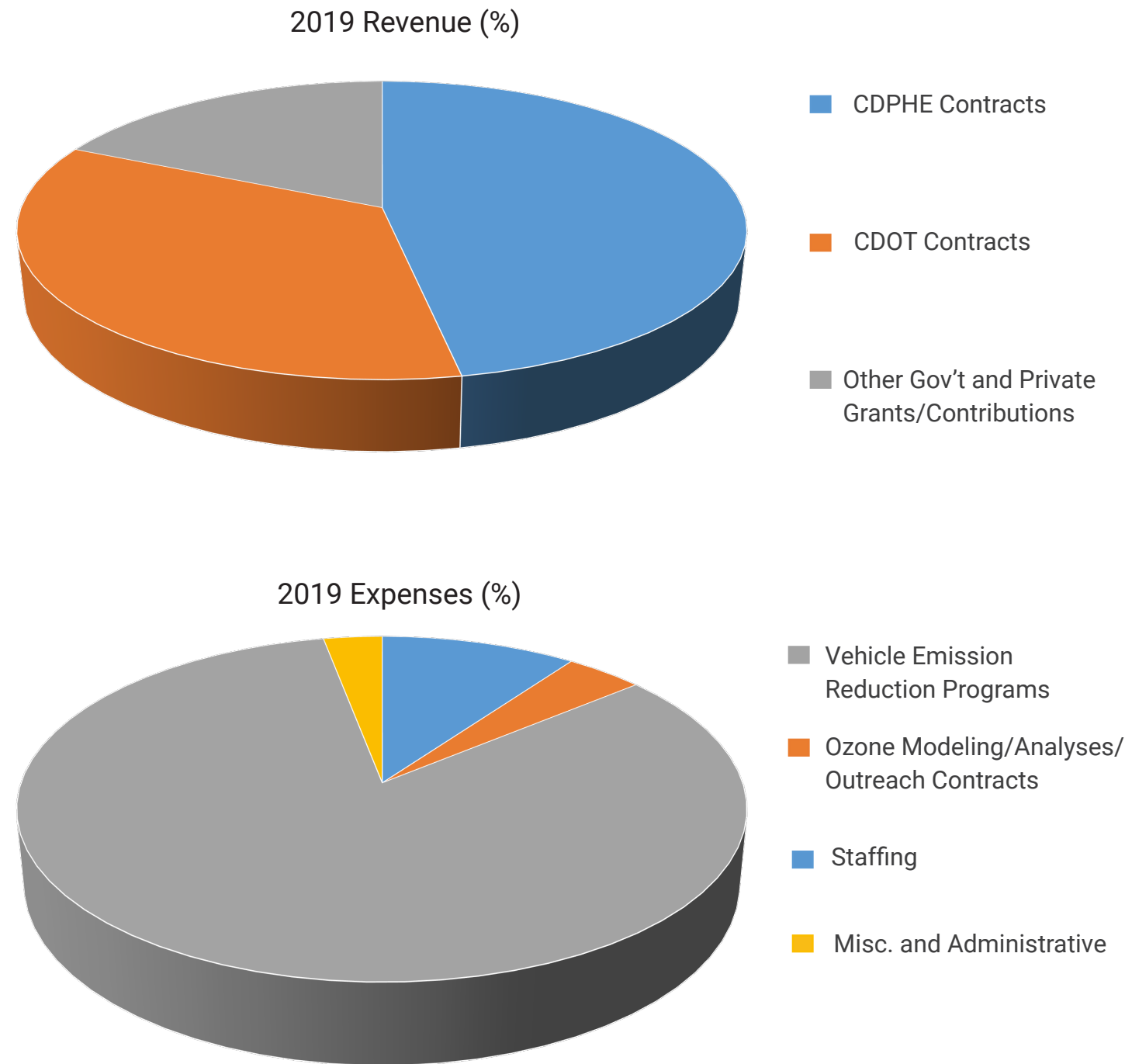
Members of the RAQC Board are appointed by the Governor of Colorado, and the Board currently consists of 26 members, as follows:

- At least six representatives of Local Governments in the Denver Metropolitan Region
- One representative from the Denver Regional Council of Governments (DRCOG)
- One representative each for Larimer and Weld County
- One representative from the North Front Range Metropolitan Planning Organization (NFRPO)
- One representative for Stationary Sources
- One representative of Automotive-related Businesses
- One representative of the region's Transportation Management Agencies
- Two representatives of the General Business Community
- One individual with Transit expertise
- A Member of the Public with appropriate Transportation experience
- A Member of the Public with appropriate Land Use Planning experience
- A Member of the Public to represent the Conservation Community
- A Member of the Public to represent the Broad Public Interest
- Two Citizens At Large
- The Executive Director - Colorado Department of Public Health & Environment (CDPHE)
- The Executive Director - Colorado Department of Transportation (CDOT)
- The Executive Director - Department of Local Affairs (DOLA)
- The General Manager - Regional Transportation District (RTD)

John Putnam is the current appointed Chair. Biographies of all members presently serving can be found on the [RAQC website](#).

How is the RAQC funded and what are its expenditures?

The RAQC receives its funding from four primary sources: local governments, planning funds from CDPHE, Congestion Mitigation Air Quality (CMAQ) program grants from DRCOG administered through CDOT contracts, and private sector contributions. In 2019, the Volkswagen settlement trust funds will become a significant portion of RAQC revenue. The majority of the RAQC's expenditures include staffing, ozone modeling, analyses and outreach contracts, and vehicle emission reduction programs.



What does the RAQC do?

The RAQC develops effective and cost-efficient air quality planning initiatives with input from local government agencies, the private sector, stakeholder groups, and citizens. The RAQC also assists with regional public/private initiatives to reduce emissions from vehicles, industry, and other sources, and implements a variety of public outreach and education efforts. The RAQC's programs operate as models to determine their real-world costs and benefits; data collected from our efforts influence which measures might be included in future air quality plans.



Air Quality Planning

The RAQC develops both voluntary and mandatory emission control measures and plans designed to improve air quality in the most cost-effective manner. We work with State agencies, local government, industry, environmental groups and citizens to develop science-based approaches, presently focusing on ozone.

www.RAQC.org/AQ-Planning



Simple Steps. Better Air.

Simple Steps. Better Air. is a program that, through increased outreach and public awareness about ground-level ozone pollution, aims to create behavior change around air quality issues and motivate more Coloradans to take action in reducing ozone-causing emissions.

www.SimpleStepsBetterAir.org



Charge Ahead Colorado

Charge Ahead Colorado provides financial support for electric vehicles (EV) and charging stations in order to encourage the widespread adoption of EVs throughout the State. Applications occur three times a year.

www.CleanAirFleets.org/Charge-Ahead-Colorado



ALT Fuels Colorado

The ALT Fuels Colorado grant program incentivizes the purchase of medium and heavy duty electric, compressed natural gas and propane vehicles for public, private, and non-profit fleets statewide. Applications occur three times a year.

www.CleanAirFleets.org/ALT-Fuels-Colorado



Mow Down Pollution - Commercial

The RAQC's Mow Down Pollution – Commercial program is aimed at encouraging and incentivizing public agencies and their contractors to purchase low emission, commercial-grade, lawn and garden equipment, including battery electric equipment and mowers and propane mowers.

www.MowDownPollution.org/Commercial



Mow Down Pollution - Residential

The Mow Down Pollution – Lawn Mower Exchange program offers deep discounts to people who choose to replace their gas-powered lawn mowers and lawn and garden tools with rechargeable, electric lawn mowers and lawn and garden tools.

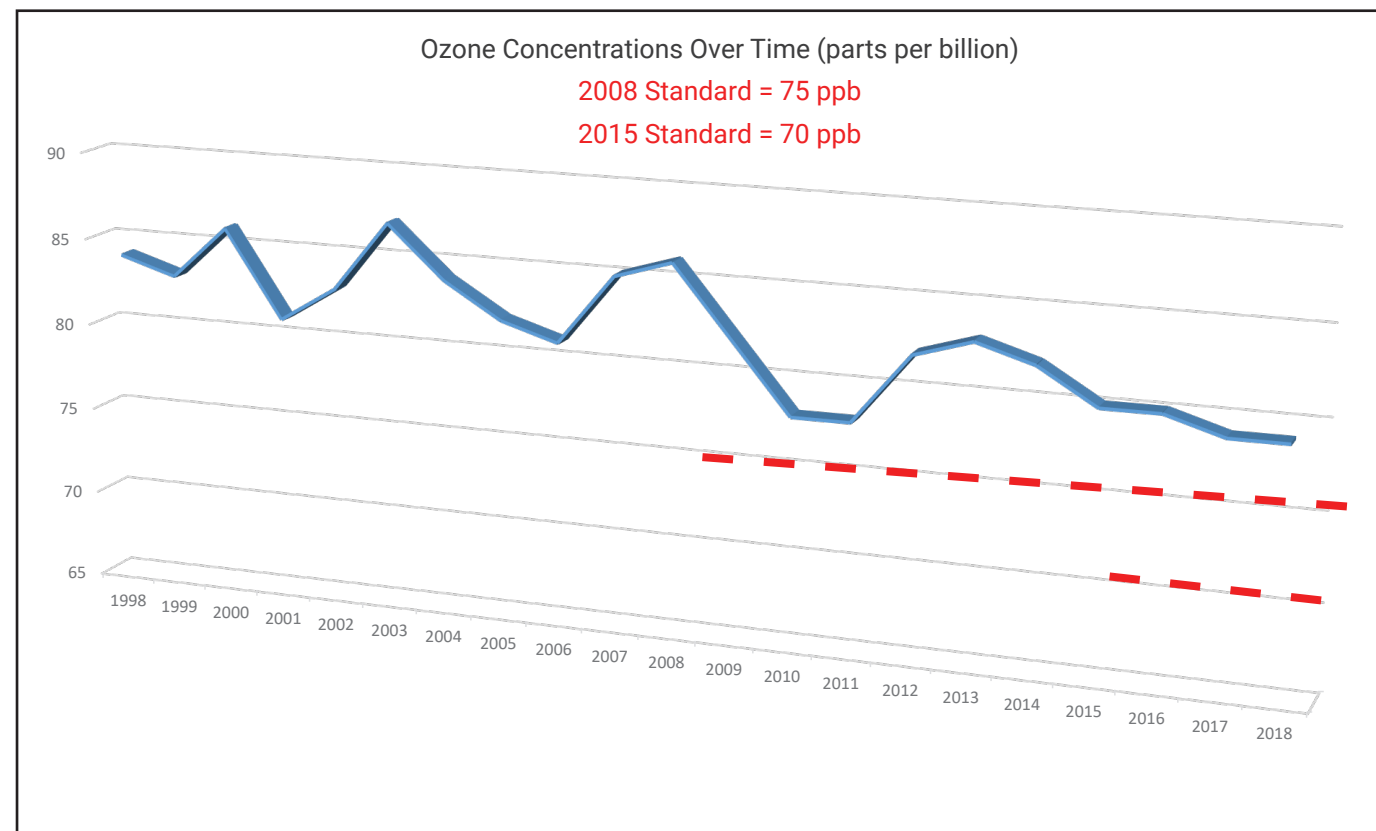
www.MowDownPollution.org/Residential

What are the RAQC's priorities?

The RAQC's priorities are focused on planning and strategy development to reduce emissions and meet air quality standards, as well as implementing incentive programs to reduce emissions from mobile sources and lawn/garden equipment. Other RAQC priorities include administering programs of public information and education on air quality matters, and continuously improving the RAQC's business practices, particularly budgeting, contract management, and human resources.

Ozone Planning & Technical Analyses

The RAQC is working to develop plans and strategies designed to attain federal air quality standards for ozone. Though the region has made significant improvements in reducing summertime ozone concentrations, monitors throughout the Front Range region frequently measure ozone in excess of federal health standards.



These values represent the 3-year average of the annual 4th highest daily maximum 8-hour ozone concentration for each monitor.

Because these values exceed current ozone standards, the RAQC is convening three committees in 2019 to evaluate strategies to reduce ozone-forming emissions from mobile sources, industrial operations, residential activities, and the transportation network. Board Members and staff will convene stakeholders, technical experts, and the public to gather the best information and debate options. The goal is, by the end of 2019, to recommend cost-effective approaches that will bring the region into attainment with the ozone standards by the early- to mid-2020s.

Accompanying this process are complex technical analyses presently underway that will inform the Committees of future ozone projections and benefits that could be achieved by strategically reducing emissions. The RAQC will work closely with the State, the EPA, experts in the region's research institutions, and its contractors to perform state-of-the-art modeling and research throughout 2019.

Incentive Programs to Reduce Emissions from Mobile and Lawn & Garden Sources

For a number of years, the RAQC has developed and implemented emission reduction programs through partnerships with other agency and public/private stakeholders. These programs have focused on retrofit and alternative fuels programs for heavy- and medium-duty diesel vehicles, programs to reduce emissions from passenger vehicles through high-emitter repairs, developing electric vehicle charging infrastructure, and lawn/garden equipment modernization.

In 2019, the RAQC will make available more than \$15 million granted to it to assist government agencies, school districts and private fleets to:

- Purchase cleaner alternative-fuel heavy duty and medium duty vehicles;
- Incentivize the expansion of the electric vehicle charging infrastructure and purchase of electric vehicles by government fleets and non-profit organizations; and
- Continue lawn mower and garden equipment change out programs that encourages electric equipment purchases.

The RAQC will continue to seek funding and other resources that will ensure these efforts can continue through 2019 and beyond.

Education, Awareness & Partnerships

The RAQC will continue to implement and improve its Simple Steps. Better Air. ozone education and awareness program. This effort is critical for:

- Raising awareness of ozone pollution in the region; an
- Motivating behavior change to reduce ozone-causing emissions from everyday activities.

Tactics for 2019 will continue to include evaluation analysis (research), a multimedia campaign (paid media advertising, earned and social media), website development, community outreach and events, partnership and stakeholder building.

Long-standing efforts to work closely and cooperatively with its transportation planning partner agencies and local governments will proceed.

- This ensures close coordination between transportation and air quality planning.
- This also allows the RAQC to assist local governments throughout the region with implementing air quality programs with public outreach tools and materials, funding and technical assistance efforts.

Business Management

Utilizing outside resources and relying on the expertise of Board Members and staff, the RAQC will deploy accounting innovations, modernize its policies and procedures, strengthen its information technology capabilities, and continue to seek stable funding sources to ensure long-term financial stability.

- The organization will seek outside consulting and guidance to continuously improve its management of contracts and bookkeeping;
- Employers Council with its comprehensive resources has been retained to help guide the office's HR program;
- Our reliance on our current consultant will expand in an effort to keep up with the ever-changing IT landscape; and
- We will reach out to current partners and establish new relationships for the purpose of demonstrating the RAQC's value to the Front Range region.



Who Staffs the RAQC?



Mike Silverstein
Executive Director

Mike leads the RAQC, focusing on air quality planning and business improvements. Mike joined the RAQC in 2018; he spent the previous 32 years with the State of Colorado and the Environmental Protection Agency in air quality planning and management.



Steve McCannon
Deputy Director

Steve coordinates the preparation of the RAQC's annual work plan and budget, oversees the Charge Ahead Colorado, ALT Fuels Colorado, and Clean Air Fleets mobile sources programs, and provides policy guidance for all RAQC programs. Steve joined the RAQC for the second time in 2002, bringing 10 years of previous public sector and business experience.



Misty Howell
Operations Manager
Board Secretary

Misty manages daily operations of the office including financial grant management, payroll, and accounting functions, manages corporate records and human resources, maintains the website, and serves as the Board Secretary for the Council. Misty joined the RAQC in 1995.



Amanda Brimmer
Technical Program Manager

Amanda coordinates the development of the RAQC's State Implementation Plans (present focus is ozone), designs and oversees complex air quality analyses, develops emission control measures, and manages the commercial Mow Down Pollution program. Amanda joined the RAQC in 2014 with extensive air quality knowledge and experience from her work in North Central Texas.



Sara Goodwin
Communications Director

Sara plans and implements communications, public outreach, education and community relations initiatives for the RAQC's Simple Steps, Better Air, ozone awareness and mobile sources programs, as well as manages content for RAQC websites. Sara joined the RAQC in 2015 and has 19 years of previous marketing and communications experience in the private sector here in Colorado.



Matt Goble
Program Coordinator

Matt communicates air quality issues to the public and stakeholders, manages the residential Mow Down Pollution program and assists in the implementation and management of ozone outreach and mobile source programs. Matt joined the RAQC in 2014.



Kaylyn Bopp
Program Coordinator

Kaylyn manages program implementation and outreach for the RAQC's ALT Fuels Colorado program, which promotes and funds compressed natural gas, propane, electric, and bi-fuel vehicles for fleets. Kaylyn joined the RAQC in 2015.



Matt Mines
Program Coordinator

Matt manages program implementation and outreach for the RAQC's Charge Ahead Colorado program, which incentivizes electric vehicles and electric vehicle supply equipment, as well as the RAQC's Diesel Retrofit program. Matt joined the RAQC in 2015.



Kelley Grubbs
Program & Data Analyst

Kelley analyzes data from the RAQC's various mobile sources programs to help quantify program benefits, assists with program implementation and outreach, tracks ozone throughout the season and assists with street sanding mitigation activities. Kelley joined the RAQC in 2015.



Jessica Ferko
Air Quality Planner & Analyst

Jessica specializes in air quality planning, control strategy evaluation, and stakeholder engagement. Jessica previously worked as an Air Quality Engineer focusing on air permitting and compliance and air dispersion modeling. Jessica joined the RAQC in 2019.



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www.RAQC.org